

CLAIMS:

1. A device comprising:
a manipulating device having a surface to contact an organ;
5 a support shaft coupled the manipulating device; and
a key member coupled to the support shaft,
wherein the key member is shaped such that rotation of the support shaft about a longitudinal axis defined by the support shaft is restricted when the key member engages a socket in a securing structure.

10 2. The device of claim 1, wherein the support shaft is flexible.

15 3. The device of claim 1, wherein the support shaft comprises a vacuum tube.

4. The device of claim 1, further comprising:
the securing structure,
wherein the securing structure includes the socket, the socket shaped to engage the key member and including a ledge and a wall, the ledge restricting translational motion of the key member in at least one direction and the wall restricting rotation of the key member
20 when the key member is engaged in the socket.

5. The device of claim 4, the supporting structure further including an aperture sized to permit passage of the support shaft.

25 6. The device of claim 4, the supporting structure further including:
an aperture sized to permit passage of the support shaft; and
a rotational support that bears against the support shaft.

7. The device of claim 4, the securing structure comprising a collar coupled to a support
30 arm, the collar including the socket.

8. The device of claim 1, wherein the manipulating device is vacuum-assisted.

9. The device of claim 1, wherein the manipulating device is shaped to contact an apex of a heart.

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10. The device of claim 1, wherein the key member comprises a central body surrounding the support shaft and a protrusion extending radially from the central body.

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11. The device of claim 1, wherein the key member is integrally formed with the support shaft.

12. The device of claim 1, further comprising a coupling mechanism that couples the key member to the support shaft.

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13. A method comprising:
engaging a manipulating device with an organ, the manipulating device coupled to a support shaft coupled to a key member; and
restricting the rotational movement of the key member relative to a securing structure.

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14. The method of claim 13, wherein the support shaft is flexible, the method further comprising accommodating rotational freedom of the organ by allowing the support shaft to twist.

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15. The method of claim 13, wherein restricting the rotational movement of the key member relative to the securing structure comprises engaging the key member in a socket in the supporting structure.

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16. The method of claim 15, wherein the socket engages the key member with a predetermined looseness, the method further comprising accommodating limited rotational freedom of the organ by allowing the key member to rotate to a limited degree in the socket.

17. The method of claim 15, wherein the socket snugly engages the key member.

18. The method of claim 15, wherein the key member may engage the socket in at least two directions, and wherein engaging the key member in the socket comprises orienting the
5 key member relative to the socket so that the key member engages the socket in one of the directions.

19. The method of claim 13, further comprising coupling the key member to the support shaft.

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20. The method of claim 13, further comprising coupling the support shaft to the manipulating device.

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21. The method of claim 13, wherein engaging the manipulating device with the organ comprises engaging the manipulating device with an apex of a heart.

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22. The method of claim 21, further comprising holding the heart in tension with the manipulating device.

23. The method of claim 13, further comprising:

opening the securing structure to open an aperture;

receiving the support shaft in the aperture; and

closing the securing structure to close the aperture around the support shaft.

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24. A device comprising:

a supporting member; and

a collar coupled to the supporting member, the collar comprising a socket, the socket shaped to engage a key member, the key member coupled to a support shaft and the support shaft coupled to a manipulating device that engages an organ, wherein the socket is shaped such that rotation of the key member about a longitudinal axis defined by the support shaft is restricted when the key member engages the socket.
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25. The device of claim 24, wherein the socket includes a ledge and a wall, wherein the ledge restricts the translational motion of the key member and the wall restricts rotation of the key member when the key member is engaged in the socket.

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26. The device of claim 24, wherein the socket is shaped to engage the key member snugly.

10 27. The device of claim 24, the collar further comprising an aperture that receives the support shaft.

28. The device of claim 27, further comprising a slot, the aperture configured to receive the support shaft via the slot.

15 29. The device of claim 27, wherein the collar comprises a first part and a second part, and wherein the aperture receives the support shaft when the first part separates from the second part.

20 30. The device of claim 24, wherein the socket comprises a plurality of projections.

31. The device of claim 24, wherein the socket is shaped to engage the key member in more than one direction.

25 32. A method comprising:

coupling a manipulating device with an apex of a heart, the manipulating device coupled to a support shaft and the support shaft coupled to a key member; and
engaging the key member with a socket in a securing structure.

33. The method of claim 32, further comprising lifting the apex of the heart.

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34. The method of claim 32, further comprising bearing the load of the heart with the securing structure, key member, support shaft and manipulating device.

5 35. The method of claim 32, wherein the key member is configured to engage the socket in more than one direction.

36. The method of claim 32, further comprising accommodating rotational freedom of the heart by allowing the support shaft to twist.

10 37. The method of claim 32, further comprising accommodating rotational freedom of the heart by allowing the key member to rotate in the socket.

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